



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Wilbur A. and Eva M. Henderson**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (U.S.C. 352, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CAPER SPURGE

'Chico'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 24th day of September in the year of our Lord one thousand nine hundred and eighty-one.

Attest:

*Donald E. Reed*  
Commissioner  
Plant Variety Protection Office  
Grain Division  
Agricultural Marketing Service

*John R. Block*  
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED  
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY		1b. VARIETY NAME <i>"Chico"</i>		FOR OFFICIAL USE ONLY PV NUMBER <b>8100030</b>	
2. KIND NAME <i>Caper Spurge</i> <sup>12/2/80</sup> <i>98W</i>		3. GENUS AND SPECIES NAME <i>Euphorbia Lathyris</i>		FILING DATE <b>11/25/80</b>	TIME <b>2:30</b> A.M. P.M.
4. FAMILY NAME (BOTANICAL) <i>EUPHORBACEAE</i> <i>Euphorbia Lathyris</i>		5. DATE OF DETERMINATION <i>Jan 15, 1970</i> <sup>8/5/81</sup>		FEE RECEIVED \$ <u>500.00</u> \$ <u>250.00</u>	DATE <u>11/25/80</u> <u>7/23/81</u>
6. NAME OF APPLICANT(S) <i>Wilbur A Henderson</i> <i>Eva M Henderson</i>		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) <i>214 W 6<sup>th</sup> Ave Chico Calif 95926</i>		8. TELEPHONE AREA CODE AND NUMBER <i>(916) 342-2972</i>	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) <i>Partnership</i>		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION		11. DATE OF INCORPORATION	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: <i>Wilbur A. Henderson 214 W 6<sup>th</sup> Ave</i> <i>Eva M Henderson Chico, Calif 95926</i>					
13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:					
<input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement. <input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) <input checked="" type="checkbox"/> 13D. Exhibit D, Additional Description of the Variety.					
14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED <i>17 yrs</i>			
15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)					
15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)					
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
(DATE)		<i>Wilbur A Henderson</i> (SIGNATURE OF APPLICANT)			
(DATE)		(SIGNATURE OF APPLICANT)			

Exhibit A *8/14 4/29/81* EUPHORBIA LATHYRIS  
(GOPHER PLANT)

# I. GENEALOGY

USING THE WILD EUPHORBIA LATHYRIS SEED AS A PLANTING BASIS, WE SELECTED THE LARGEST PLANTS, WE THEN SELECTED THE LARGEST SEEDS OUT OF EACH YEARS PLANTINGS. THESE WERE THE BEGINING OF THE CHICO STRAIN OF EUPHORBIA LATHYRIS.

THE CHICO VARIETY BEING SIMILAR TO THE WILD PLANTS IN AS MUCH AS BOTH WERE SINGLE STOCK, THE LATERAL SIDE BRANCHES EMERGED APPX. ONE FOOT FROM THE GROUND LEVEL, EACH YEAR WE BEGAN TO INCREASE THE SIZE OF THE NEWER RLANTS.

NEXT ON THE PROGRAM WE SELECTED THE LARGEST PLANTS AND SEEDS OF THE LIGHTEST COLORINGS WHICH SEEMED TO HAVE ALSO THE LARGEST SEED PODS. OUT OF THESE SELECTIONS WE DEVELOPED THE SEED AND PLANTS WHICH WE NAMED THE CHICO GOLDEN, THESE PLANTS WERE UNUSAL IN THAT THESE PLANTS WERE HEAVIER IN DIAMETER OF THE STOCK AND MOST DESIRABLE WAS THE FACT THAT THE PLANTS INSTEAD OF JUST ONE MAIN STOCK, THE CHICO GOLDEN PLANTS WERE MULTI. STOCK PLANTS, THE LATERALS EMERGING AT THE GROUND LEVEL AND NUMBERING FOM FOUR TO SIX SIDE STALKS.

FROM THE CHICO GOLDEN PLANTS WE CONTINUED TO SELECT THE LARGEST SEED AND THE LIGHTEST COLORED SEEDS WHICH WE PLANTED AND HAND POLINATED WITH SELECTED PLANT POLEN, WE WERE REWARDED WITH THE NEW PLANTS. WE HAVE NAMED THESE NEW PLANTS THE CHICO *9/11/81*, THESE PLANTS DIFFER GREATLY AS FOLLOWS, HEIGHT\*- THESE PLANTS ARE DOUBLE THE HEIGHT OF THE OTHER PLANTS, SOME REACHED THE SIZE OF EIGHT (8') FEET TALL. ALL WERE MULTI. STOCK. AND THE PLANTS WEIGHED TWICE AS HEAVY. THE SEEDS FROM THIS NEW STR AIN ARE NEARLY ~~TWICE~~ *9/11/81* TIMES AS LARGE AS USUAL. WE HAVE PLANTED THESE SEEDS AND THE GERMINATION RATE WAS ~~90%~~ *90%* ). which is good. THESE SEEDLINGS ARE MUCH HEAVIER TALLER AND FASTER GROWING THAN THE WILD OR COMMERCIAL AND BEING MULTI. STEMMED WILL PRODUCE GREATER AMOUNTS OF LATEX TO BE EXTRACTED INTO CRUDE OIL, WHICH IS THE ULTIMATE DESIRES ON OUR PROGRAM.

## CHICO *9/11/81*

1. THE PLANTS AVERAGE SIX FEET TALL SOME OVER EIGHT FEET TALL.
2. THE SEED ARE ABOUT THREE TIMES AS LARGE AS THE COMMERCIAL PLANT SEED.
3. THE COLORING OF THE SEED IS LIGHT TAN TO CREAMY, SIMILAR TO THE COLORING OF THE CHICO GOLDEN PLANT SEED.
4. THE

THESE EUPHORBIA LATHYRIS PLANTS AND SEED ARE VERY DESIREABLE FOR THE OIL EXTRACTION NECESSARY FOR THE SYNTHETIC OIL PROGRAM.

*3 changes dated 9/11/81 authorize by phone  
call 10:30 am 9/11/81 to Wilbur Henderson.  
Follow up letter to come.*

# 8,100,030 Chico - Euphorbia Lathyrus

Exhibit A 88W 2/29/81

1. Stability

The "Chico" Variety (Euphorbia Lathyrus) has proven a very stable seed product over the last several generations of re-plantings. We have had no reversions back to natural or commercial type plants. This year we have approx 800,000 plants.

2. Generations of Growth.

We have been growing Euphorbia Lathyrus plants for Thirty Two (32) years starting with the Wild Type or natural seeded plants.

Special selections of plants began approx. Fifteen (15) years ago, we selected the larger plants, seeds and more robust plants. We began to have a new type plant producing <sup>between</sup> 1975 and 1979.

Since then we have selected this

new plant type and have had excellent results. This New or "Chico" Euphorbia Lathyris, producing extremely heavy multi stem, tall growing plants, and being very heavy seed producers.

Exhibit B. 9811 6/29/81

### Comparison of plants

#### A. ~~Common~~ or Wild Type

1. The <sup>Wild &</sup> Common or commercial types I have listed as a comparison plants is the single stalk plant with lateral branches radiating from the stalk in the upper two thirds ( $\frac{2}{3}$ ) of the plant height. This type plant we have grown for the last thirty (30) years for Orchards, garden & the nursery ~~market~~ <sup>protection</sup> of ~~bees~~ <sup>rodents</sup>, & other rodents.

#### 2. The "Chico" Euphorbia Lathyris

From the common or commercial type plants we began to select the larger plants, any variations, larger seeds, shape of the plants

until we began to see changes in the plant growth. We selected the best specimens from several generations until we finally came upon the multi <sup>stalk</sup> ~~stem~~, heavy stalk with laterals extending from the ground to the top of the plant. This type plant produces greater quantities of plant material seeds, and robust protection. The research for oil from these plants need the largest amount of Bio Mass available for the Extraction of Crude Oil. These plants grow to a height of 5'-8' with 6 to 15 lateral stalks to a full rounded top. Dry wt per plant average 1 lb, seed weight between 4 oz to 9 oz with one select plant producing 2 1/2 lbs seed. This plant was 8 1/2' tall, had special care, diameter of the stalk at the Base was 2 3/8" in dia. After seed production it died as is common with the Euphorbia Lachyris species.

We have under research and growing approx 650,000 plants of this "Chico" seed type.

Other plantings of the Wild, Common types and other select plants for research and

EXHIBIT C  
(Caper Spurge)

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY  
CAPER SPURGE (*Euphorbia lathyris*)

NAME OF APPLICANT(s) <i>Wilbur &amp; Eva Henderson</i>	TEMPORARY DESIGNATION <i>CHICO</i>	VARIETY NAME <i>CHICO</i> <i>ggw</i> <i>6/25/81</i>
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) <i>214 W 6<sup>th</sup> Ave Chico, Calif</i>		FOR OFFICIAL USE ONLY
PVPO NUMBER <i>1008.030</i>		PVPO NUMBER <i>8/00030</i> <i>6/25/81</i>

Place numbers in the boxes (e.g., ) for the characters that best describe botanical plants of this variety.

MATURITY

A. 50% Bloom:

Number of days from planting

Days earlier than

Days later than

1 = Chico

2 = Common (Specify) \_\_\_\_\_

B. Ripe Seeds:

*Chico*  Days earlier than

Days later than

1 = Chico

2 = Common

PLANT (50% Bloom Spaced Plants)

*24" in Rows - 32" on Center*

cm height (ground level to top)

cm shorter than

cm taller than

cm width (Max Spread)

cm narrower than

cm wider than

1 = Chico

= Common

1 = Chico

2 = Common

grams per plant (Dry wt ground level to top)

g lighter than

g heavier than

1 = Chico

2 = Common

*130.2*

## STEM

☒ Surface: 1 = Glabrous (Chico) 2 = Slightly Pubescent  
3 = Pubescent

☒ Color: 1 = Yellow Green (Chico) 2 = Other \_\_\_\_\_

☒ Branching: 1 = Upper 2/3 of stem 2 = From bottom to top of stem (Chico)  
3 = Other \_\_\_\_\_

☒ <sup>cm</sup>mm Diameter at base (spaced plants)

☐ mm thinner than ☐

☐ <sup>cm</sup>mm thicker than ☐

1 = Chico 2 = Common

## LEAVES

## Cauline

☒ Shape: 1 = Linear 2 = Lanceolate 3 = Linear - Lanceolate  
4 = Oblong - Lanceolate 5 = Oblong 6 = Ovate  
7 = Other (Specify) \_\_\_\_\_

☐ Surface: 1 = Glabrous 2 = Slightly Pubescent 3 = Pubescent

☐ Color: 1 = Grey green (Chico) 2 = Green 3 = Other (Specify) \_\_\_\_\_

☒ <sup>cm</sup>mm Length

☐ mm shorter than ☐

☒ <sup>cm</sup>mm longer than ☒

☐ <sup>cm</sup>mm width

☐ mm narrower than ☐

☒ <sup>cm</sup>mm wider than ☒

1 = Chico 2 = Common

1 = Chico 2 = Common

## Floral

☒ Shape: 1 = Ovate 2 = Ovate-Lanceolate 3 = Triangular - Ovate  
4 = Cordate 5 = Other (Specify) \_\_\_\_\_

## FLOWERS

☐ mm Cyathium (Cup-shaped involucre) mm height

☒ <sup>cm</sup>mm Cyathium mm diameter x 4 cm length

☒ Petal (gland margin) Color: 1 = Yellow green (Chico)  
2 = Other (Specify) \_\_\_\_\_

☒ Gland Color: 1 = white 2 = yellow 3 = orange 4 = red

## CAPSULE

Chico ☐ % shattering 1 = Low (1-10%)    2 = Medium (11-30%)  
3 = High (above 30%)

☐ ☒ <sup>1.5 cm</sup>  
~~1~~ ~~mm~~ length

☐ ~~1~~ ~~mm~~ shorter than ☐

☐ <sup>1.5 cm</sup>  
~~1~~ ~~mm~~ longer than ☒

1 = Chico

2 = Common

☒ Color (Predominately): 1 = Buff    2 = Cream    3 = Golden  
☒ at harvest 4 = Green    5 = Brown    6 = Other (Specify)  
 maturity

to <sup>350</sup> ☒ <sup>Maximum</sup>  
~~600~~ Number of capsules per plant (Spaced plants)

☐ Number capsules less than ☐

☒ Number capsules more than ☒

1 = Chico

2 = Common

## SEED

☒ <sup>1.5 cm</sup>  
~~1~~ ~~mm~~ length

☐ mm shorter than ☐

☒ <sup>1.5 cm</sup>  
~~1~~ ~~mm~~ longer than ☒

1 = Chico

2 = Common

☒ Color (predominately): 1 = Tan Buff (Chico)    2 = Brown  
3 = Olive green    4 = Golden  
5 = Other (Specify)

☒ Surface: 1 = Wrinkled (Chico)    2 = Other (Specify)

☒ ☒ ☒ grams per 1000 seed

☐ grams lighter than ☐

☒ grams heavier than ☒

1 = Chico

2 = Common

8. DISEASE, INSECT, AND NEMATODE REACTION (0 = Not tested 1 = Susceptible  
 2 = Resistant):

0 ☒ Pythium (Damping off) (Specify species) None

0 ☒ Verticillium (Specify species) None

Don't ☒ (Specify) We have had no problems on any

Plantings. (Tests were made)

6/25/81

## INTERNAL CONSTITUENTS:

☐☐☐ % Oil (Plant - dry wt)☐☐☐ % Oil (Seeds - dry wt)☐☐☐ % Other (Specify) \_\_\_\_\_☐☐☐ % Other (Specify) \_\_\_\_\_

We have no Specific Data on Oil Content at this time. Will Send as soon as available.

## ADDITIONAL INFORMATION:

1. I have changed some Blocks from mm to cm in my measurement. easier for my measure.
2. Concerning #8. we have other growers for us who have had wilt & Dieback due to overcrowding only in nursery conditions. not in the field.
3. In the extraction of Oil from plant material, there doesn't seem to be any difference in Dry & Green Bio mas as to amount or weight upon extraction
4. I believe these forms are quite complete for description of the Euphorbia plants.
5. Do you need pictures to add to classification of the plants?